
US Environmental Protection Agency Region 10

Eastern Michaud Flats Superfund Site
Proposed Plan and Record of Decision
Amendment for the Simplot OU

March 2009

Purpose of the Presentation

- To provide and update information regarding the latest proposed cleanup action at the Simplot Don Plant
 - To collect input from the public regarding the cleanup action
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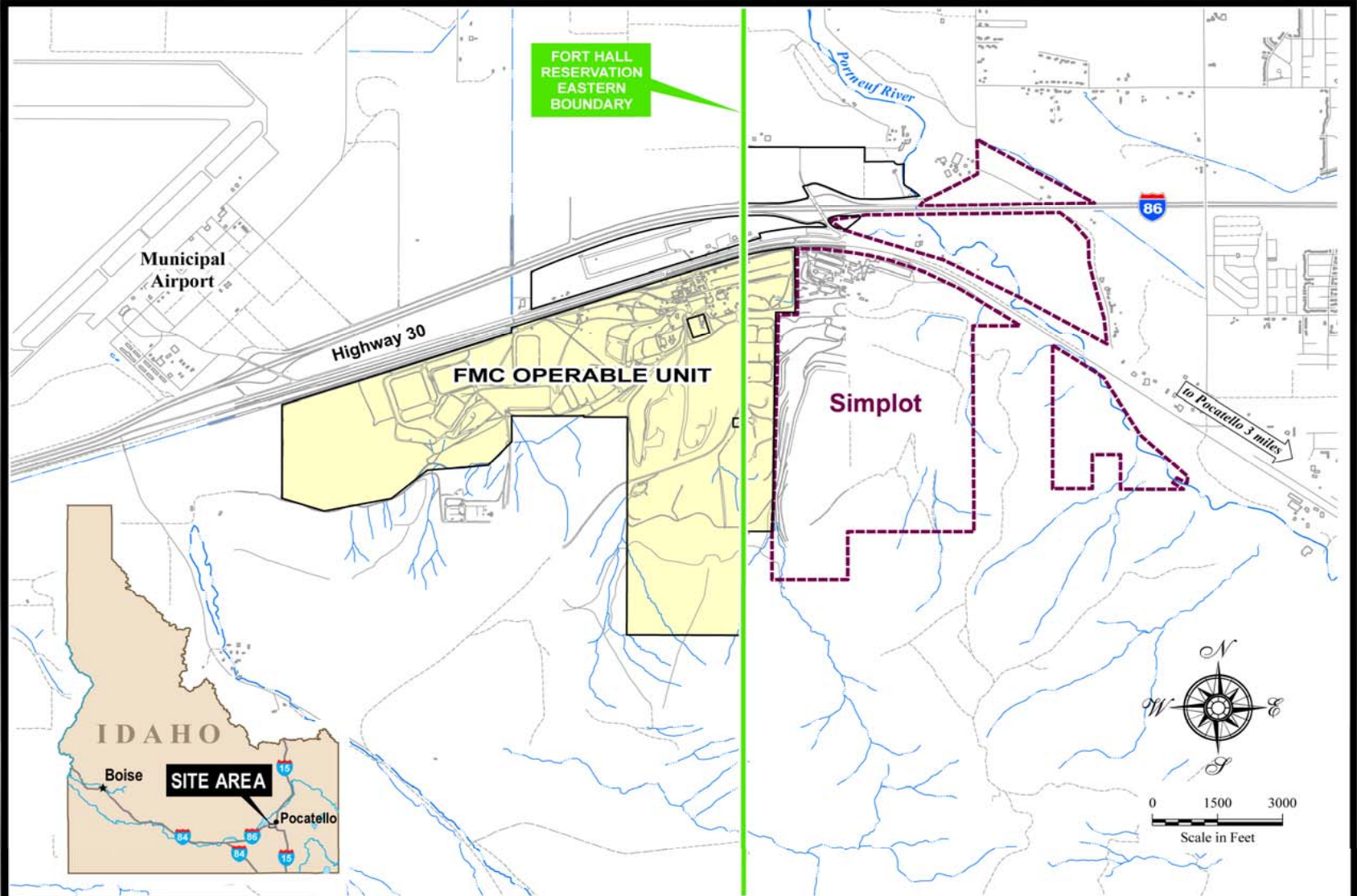
Overview

- Simplot Don Plant is part of the EMF Superfund Site
 - Extensive studies have been conducted in the area since the 1980s
 - Cleanup actions were initiated in the 1990s to clean up air, soil, groundwater, and surface water associated with the site
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Site Background

- EMF Superfund Site includes FMC and Simplot
- Simplot produced phosphoric acid for fertilizer and FMC was an elemental phosphorus manufacturing facility
- FMC ceased production in 2001
- Simplot continues to operate
- Entire site is 2,475 acres, with most of FMC on Fort Hall Reservation

REGIONAL SETTING





WWTP

Batiste

I-86

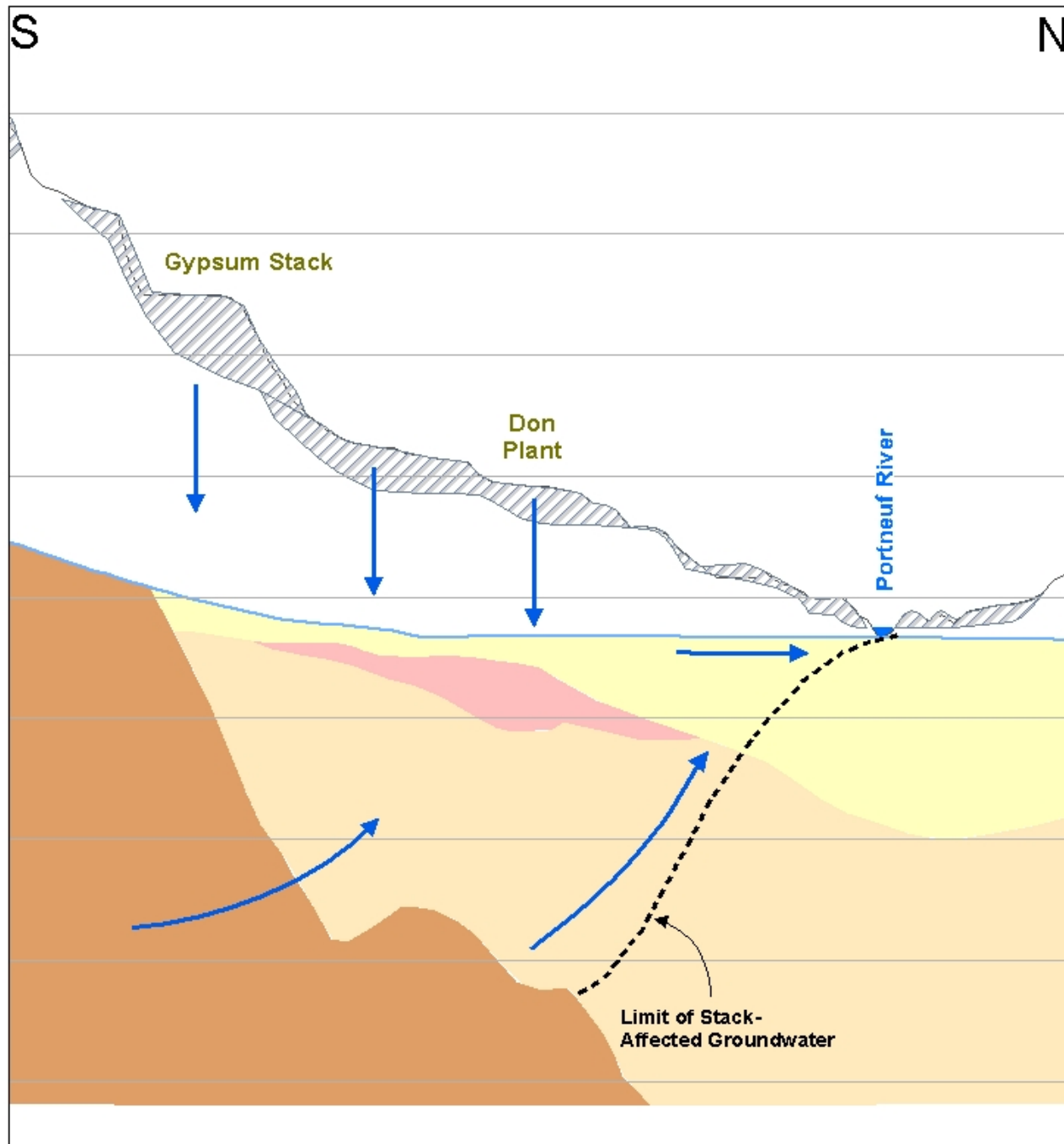
Simplot

Hwy 30



1998 ROD Summary

- In 1998 EPA issued Record of Decision (ROD)
 - Eastern Michaud Flats (EMF)
 - Included remedial decisions of FMC OU, Simplot OU, and surrounding area (Off-Plant OU)
 - Groundwater beneath the EMF site contains contaminants of concern attributable to both FMC and Simplot
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Simplot Plant Area

Cross Section From Gypsum Stack To Portneuf River

Source Areas and Groundwater Flow Paths

Legend

Fill Limit



GW Level August 2003

Hydrogeologic Units

Upper Zone (Sand and Gravel)

American Falls Lake Bed Clay

Lower Zone (Sand, Gravel, Silt, Clay)

Bedrock (Andesite)

Groundwater Flow Path



Potential Source Areas

Gypsum Stack

Don Plant

0 1,000 Feet

Vertical Exaggeration 10 X





ROD Summary (Continued)

- For Simplot, the main component of the Selected Remedy was to install a groundwater extraction system
 - Main source of contaminants was assumed to be from the gypstack
 - Remove arsenic and other contaminants from groundwater before discharging to the Portneuf River
 - Phosphorus was not identified as a contaminant of concern in the 1998 ROD
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Simplot Plant Area

Groundwater Extraction and Groundwater Monitoring Areas

Legend

Existing Extraction Wells

Springs

Groundwater Flow Path

GW Extraction/Monitoring Areas

Target Extraction Area

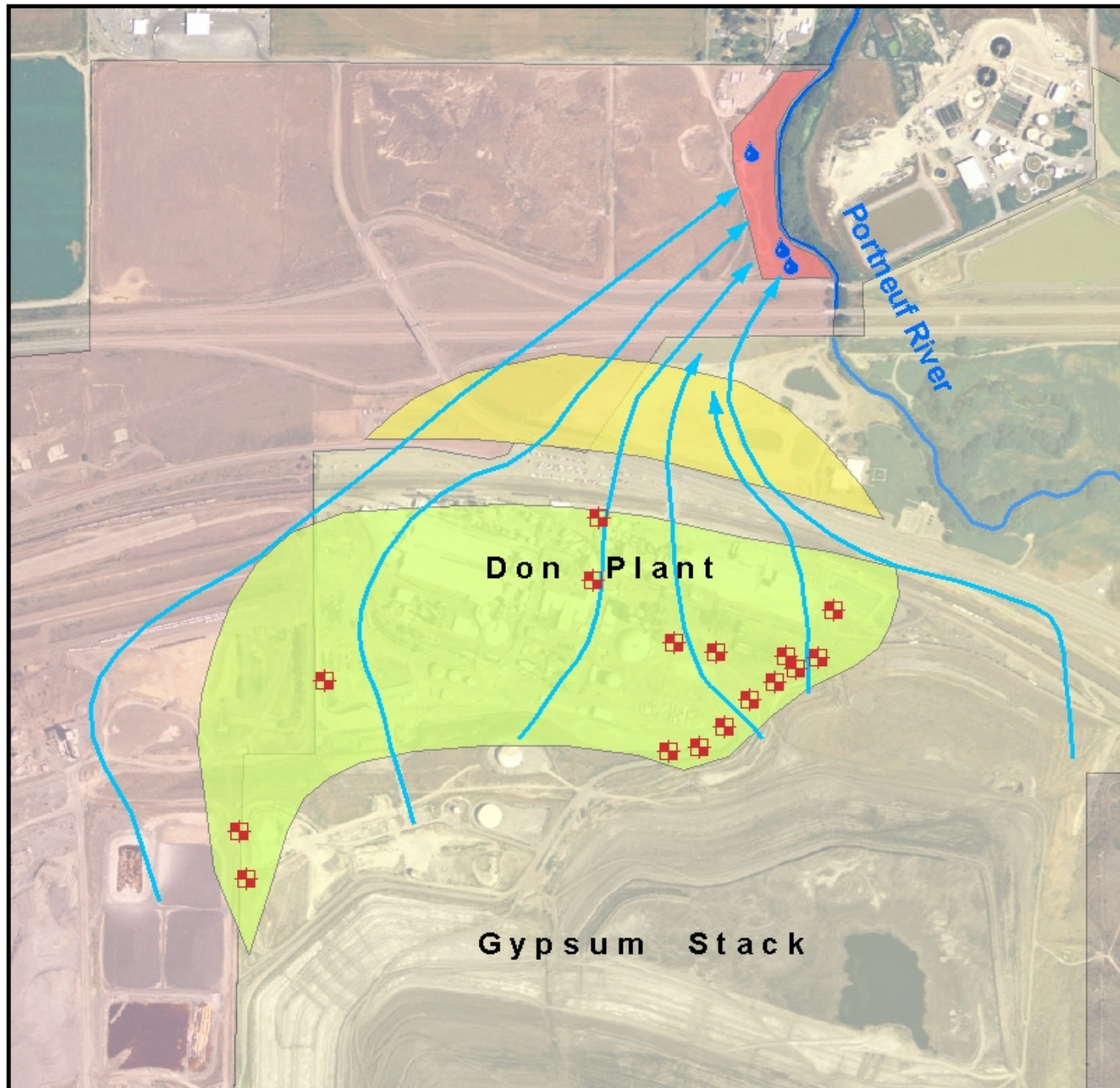
Extraction Assessment Area

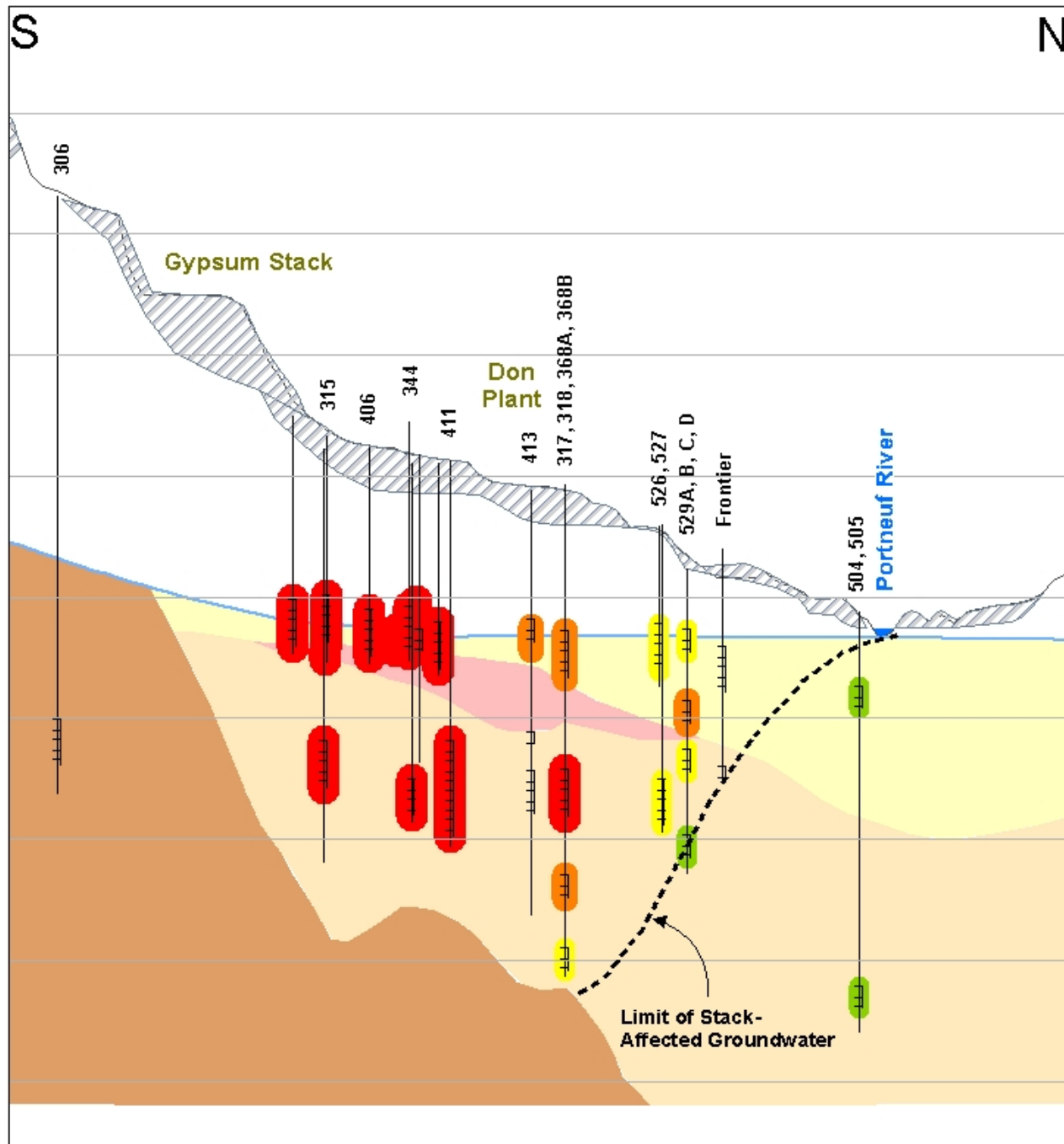
Compliance Area

Operable Unit

FMC

SIMPLOT





Simplot Plant Area **Cross Section From Gypsum Stack To Portneuf River**

Arsenic in Groundwater

Legend

- Well Screen
- Borings within 225 ft

Fill Limit

- GW Level August 2003

Hydrogeologic Units

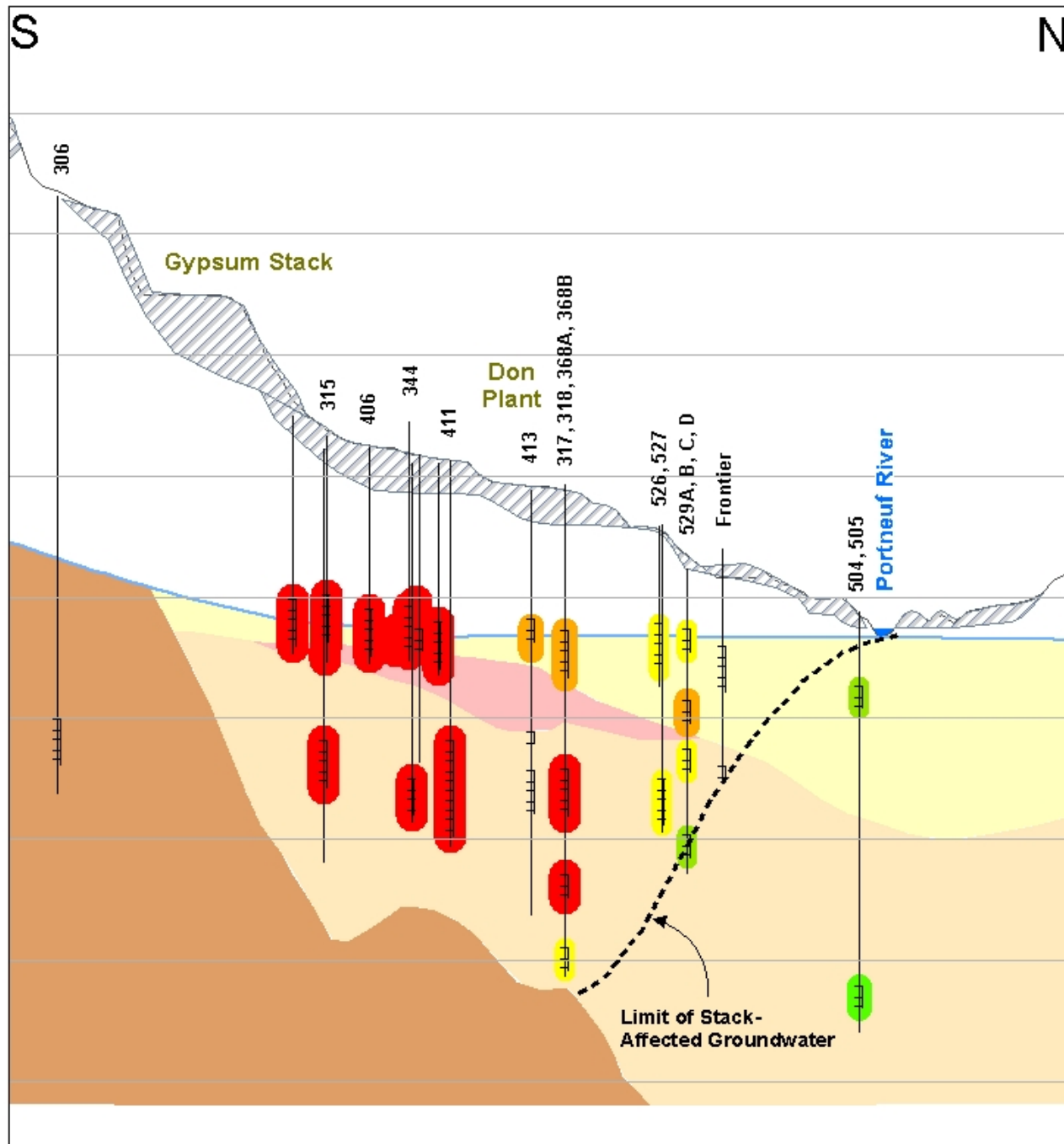
- Upper Zone (Sand and Gravel)
- American Falls Lake Bed Clay
- Lower Zone (Sand, Gravel, Silt, Clay)
- Bedrock (Andesite)

Arsenic, Q1 2007, mg/L

- ND
- ND - 0.01
- 0.01 - 0.025
- 0.025 - 0.25
- 0.25 - 0.529

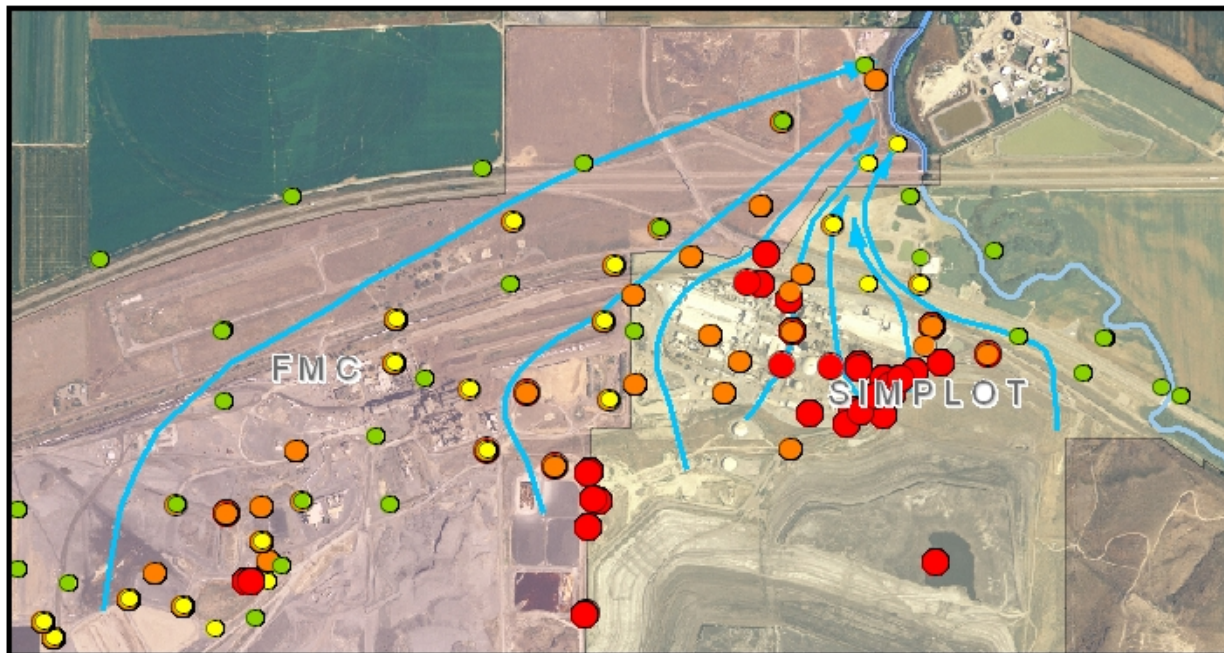
0 1,000 Feet

Vertical Exaggeration 10 X



0 1,000 Feet

Vertical Exaggeration 10 X

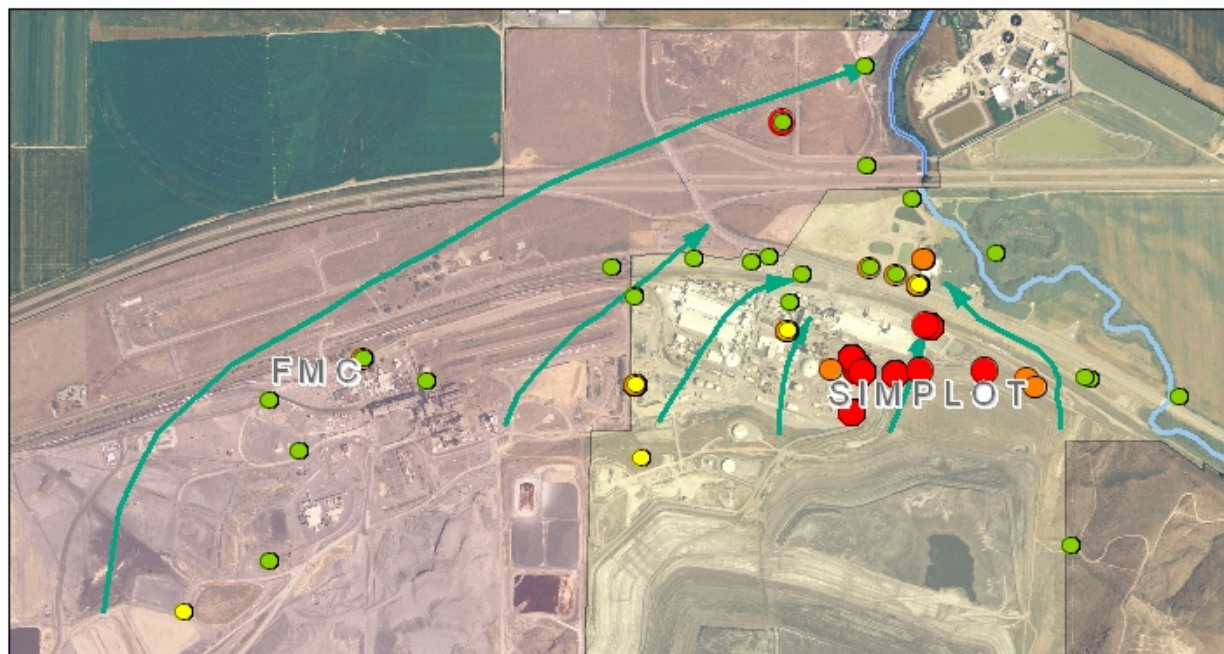
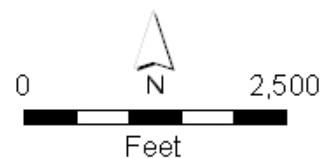


Upper Zone

Orthophosphate, all data, mg/L

- ▲ ND
- ND - 1
- 1 - 10
- 10 - 100
- 100 - 4930

Flow Path Upper Zone

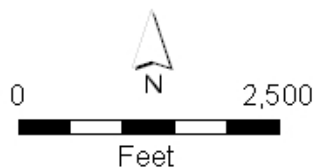


Lower Zone

Orthophosphate, all data, mg/L

- ▲ ND
- ND - 1
- 1 - 10
- 10 - 100
- 100 - 500

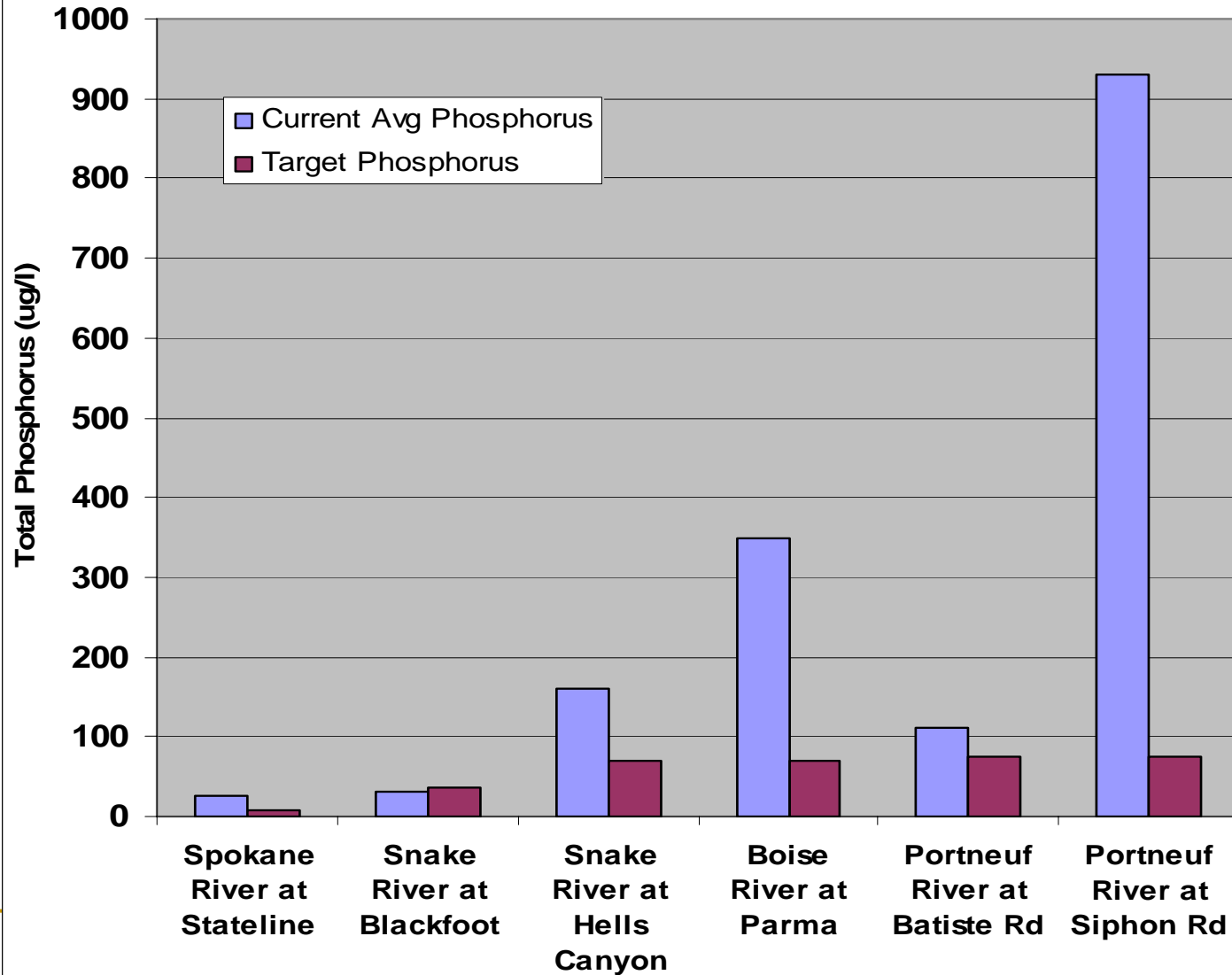
Flow Path Lower Zone



1999 Idaho DEQ Develops TMDL for Phosphorus

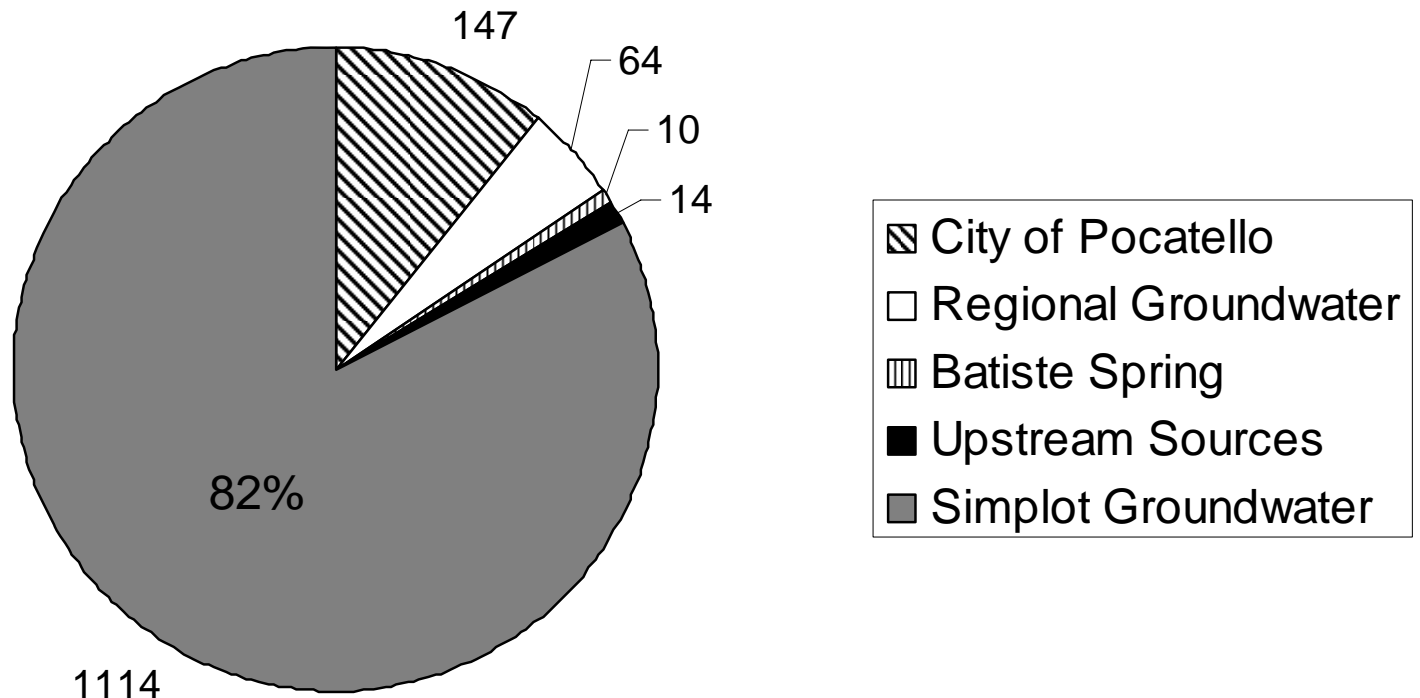
- 1999 Idaho Department of Environmental Quality prepared a Water Body Assessment
 - Estimated phosphorus contributions from various facilities
 - Simplot was the primary contributor of phosphorus to the Portneuf River
 - phosphorus causes the overgrowth of algae and other water plants
- A Total Maximum Daily Load (TMDL) was developed for phosphorus

Examples of Nutrient-Impaired Waters in Idaho

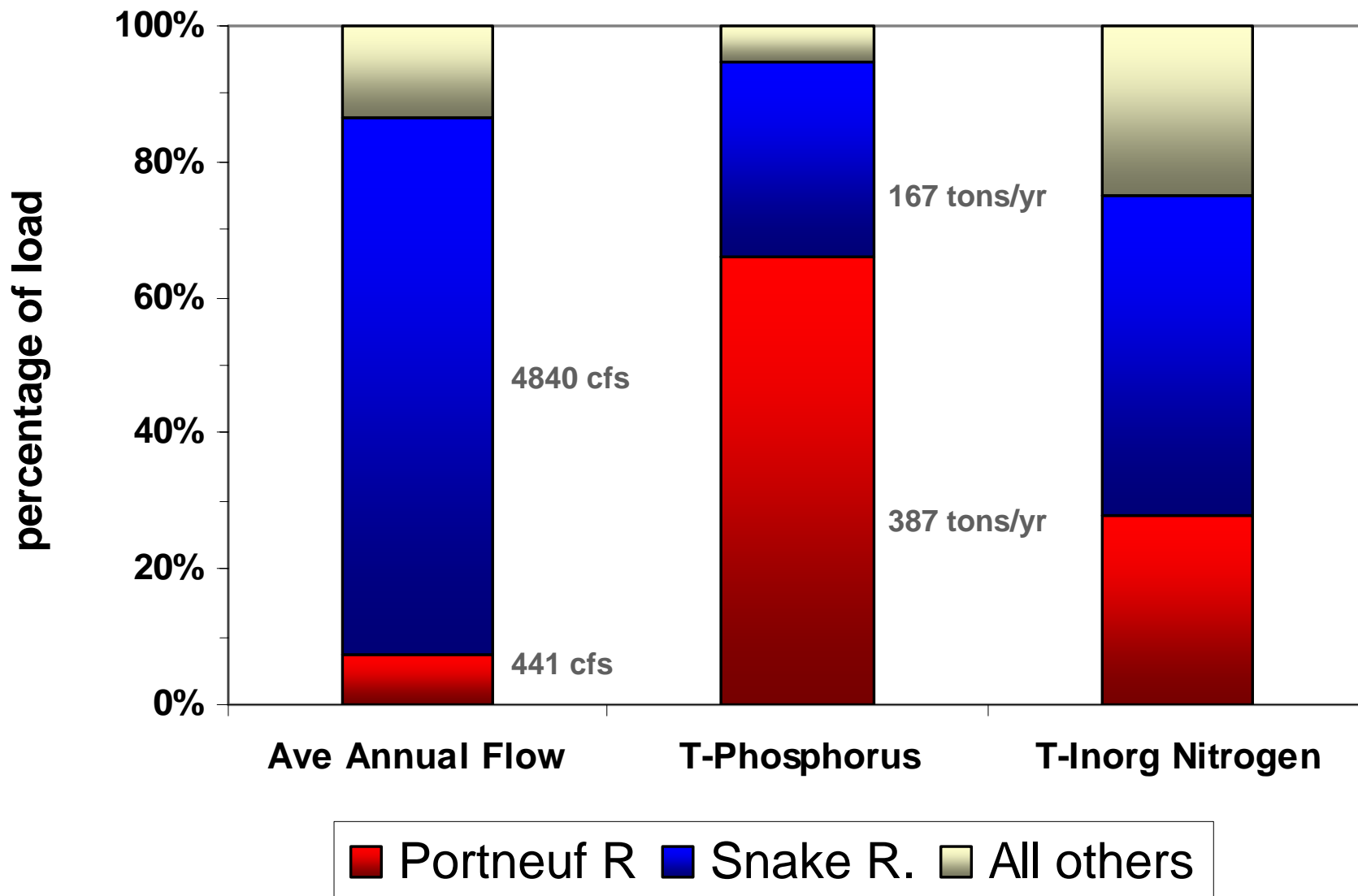


Estimated Daily Loadings of Total Phosphorus

Siphon Road - September 2002



Percent nutrient load to American Falls Reservoir



Lower Portneuf



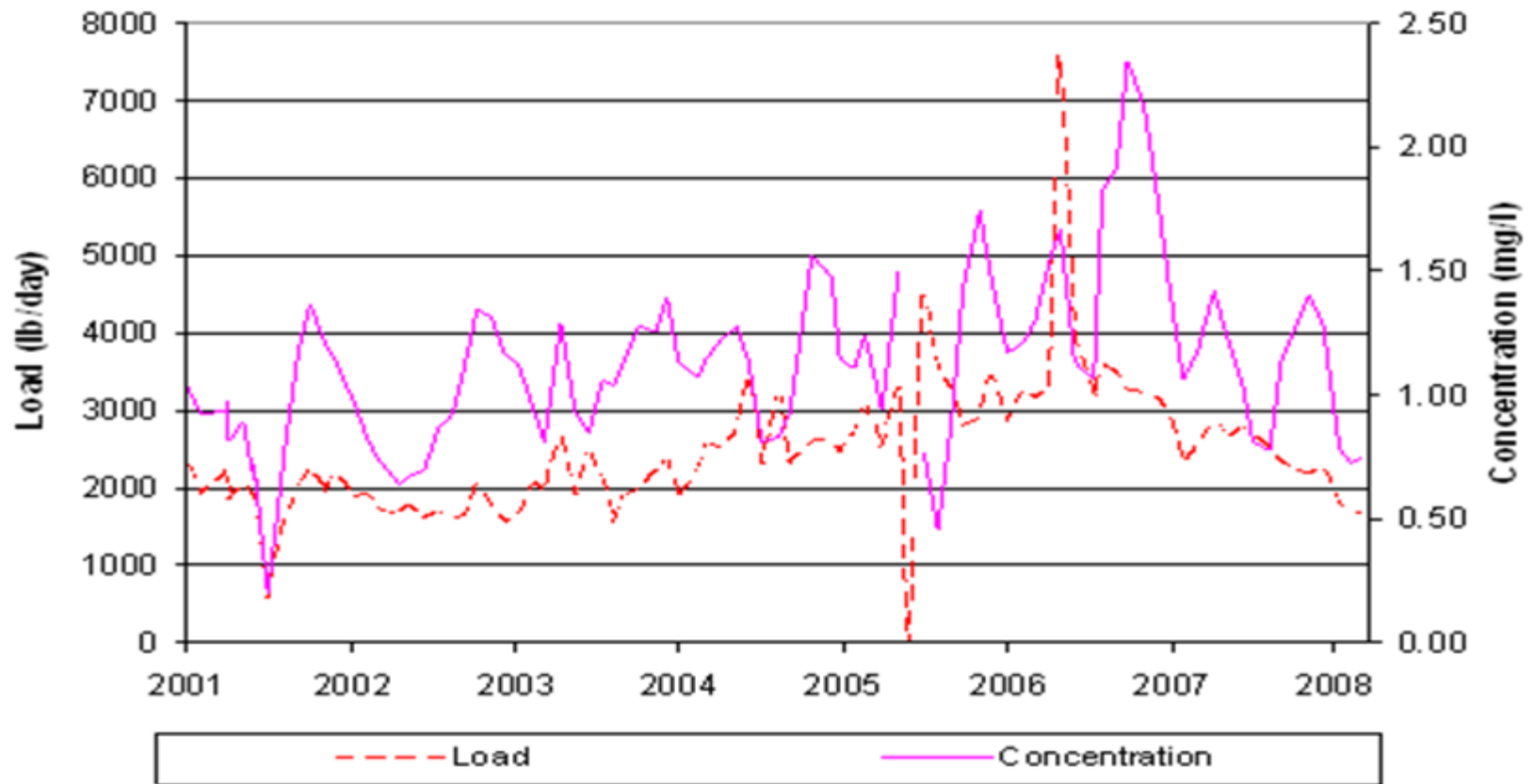
Effects of the TMDL

- In 2003 the Portneuf River TMDL Implementation Plan identified mass reduction goals including 95% reduction for site sources
 - Simplot describes reducing phosphorus load to the Portneuf River by 80% using a modified groundwater extraction system developed for arsenic under the 1998 ROD
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Levels of Arsenic and Phosphorus in Groundwater

Date	Arsenic ($\mu\text{g/L}$)	Phosphorus (mg/L)
3 rd Quarter 2008 (All Sample Points)	3 – 814	0.01 – 5,200
2007 Annual Report (Batiste Springs)	5 – 37	2 – 48
Typical Pocatello Area Background	< 10	< 0.05

Total phosphorus concentrations at Siphon Road



What new and refined information brings us to the proposal to amend the ROD?

- Groundwater extraction alone will not achieve sufficient reductions in phosphorus loading to meet the TMDL
- Releases of contaminants of concern at or near Simplot's phosphoric acid plant require characterization and evaluation
- Water infiltration through the gypsum stack into groundwater needs to be controlled
- Phosphorus should be identified as a CERCLA COC

2009 Proposed ROD Amendment

- EPA proposes to amend 1998 ROD to:
 - ❑ Add phosphorus as a contaminant of concern
 - ❑ Develop plan to control phosphorus and other contaminants from Simplot
 - ❑ Identify and quantify releases from Simplot's Phosphoric Acid Plant
 - ❑ Install liner on gypstack to reduce infiltration of contaminated water
 - ❑ Develop clean up levels for phosphorus to meet TMDL
 - ❑ Monitor, operate, maintain, and change the extraction and monitoring system as necessary to meet clean up goals for both arsenic and phosphorus

2009 Proposed ROD Amendment

- Will be led by EPA with IDEQ, SBT, and Simplot support
 - Comments and input from public will be considered in selected remedy
 - Proposed Plan will include
 - Scope and Role of Proposed Action
 - Site Risks
 - Remedial Action Objective (aka clean up goals)
 - Potential Alternatives
 - Preferred Alternative
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Summary of Alternatives in the Proposed Plan

- Alternative 1 – No Action
 - Alternative 2 – Pump and Treat
 - Alternative 3 – Source Control and Groundwater Extraction
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Summary of Alternative 3 – Source Control and Pump and Treat

- ❑ Add phosphorus as a contaminant of concern
 - ❑ Identify and quantify releases from Simplot's Phosphoric Acid Plant
 - ❑ Install liner on gypstack to reduce infiltration of contaminated water
 - ❑ Develop plan to control phosphorus and other contaminants from Simplot
 - ❑ Develop clean up levels for phosphorus to meet TMDL
 - ❑ Monitor, operate, maintain, and change as necessary existing groundwater extraction system to meet clean up goals
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Develop plan to control phosphorus and other contaminants from Simplot

- Conduct release investigations in the main plant area
 - Replace, repair, or upgrade leaking equipment and vulnerable areas
 - Enhance groundwater extraction system to capture arsenic, phosphorus, and leaks from the plant area
 - Develop plan to utilize extracted groundwater as part of plant operations
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Install liner on gypsum stack to reduce infiltration of contaminated water

- Liner to be installed in 3 phases
 - Initial surge pond construction (2009)
 - Lower gypstack (2010)
 - Upper gypstack 1 (by 2014)
 - Upper gypstack 2 (by 2014)
 - Minimize seepage of arsenic and phosphorus to groundwater
-

Monitor, operate, maintain, and change as necessary groundwater extraction system

- Finalize GW extraction system design
- Monitoring well network
 - Existing monitoring wells
 - New monitoring wells
 - Samples collected from the Portneuf River and springs
- Samples collected quarterly and evaluated for trends
- Adjustments and changes as needed

Key Features, Capital and Operational Costs Of Alternatives

Alternative	Meet RAOs (Y/N)	Time to Implement (Years)	Capital Costs (\$)	Oper. Costs (\$/yr)	NPV (\$)
1	N	0	0	0	0
2	Y	15	\$16M	\$24M	\$260M
3	Y	15	\$48M	\$300,000	\$50M

Schedule for Action

- Proposed Plan – February 2009
- Public Meetings - March 2009
- Public comment period – March/April 2009
- ROD Amendment/CD SOW Amendment – May 2009
- Simplot Remedial Action
 - Plant area investigations and upgrades – underway
 - Modify groundwater extraction system – underway
 - Line gypstack – Begin summer 2009
 - Monitoring – Continue through at least 2023

Questions?

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